

PENDING CLAIMS

IN THE CLAIMS

1. A method for managing access to a logical I/O device, said method comprising:
communicatively coupling first and second nodes, having respective first and second bus controllers, and said logical I/O device, by means of a bus and said first and second bus controllers;

receiving on said first controller a request to reserve said logical I/O device; and
communicating by means of said bus from said first to said second controller a reservation request for said logical I/O device for execution by said second controller, in response to said receiving.

2. The method of claim 1, further comprising the step of:
reserving said logical I/O device for said first node within said second controller, in response to said communicated reservation request.

3. The method of claim 2, wherein said step of reserving further comprises:
determining whether said logical I/O device is already reserved within said second controller;

communicating a response, indicating failure to reserve said logical I/O device, to said first node when said logical I/O device is already reserved; and

otherwise, reserving said logical I/O device for said first node within said second controller, and communicating to said first node a response indicating success in reserving said logical I/O device.

4. The method of claim 3, further comprising the steps of:
receiving said response to said communicated reservation request;
aborting the method for managing access when said response indicates failure to reserve and said first controller is subordinate to said second controller;

otherwise, delaying and communicating again a reservation request for said logical I/O device when said response indicates failure to reserve and said first controller is dominant to said second controller; and

otherwise, responding, indicating success, to said received reservation request.

5. The method of claim 1, wherein said step of communicatively coupling further comprises:

communicatively coupling said first and second nodes and said logical I/O device depending from a multi-logical-device, third controller by means of said bus and said first and second controllers.

6. The method of claim 1, wherein after said step of receiving and before said step of communicating, the following steps are performed:

in response to said reservation request, determining whether said logical I/O device is already reserved within said first controller, and aborting said method for managing access when said logical I/O device is already reserved; and

otherwise, reserving said logical I/O device for said first node within said first controller.

7. A computer-readable medium for data storage wherein is located a computer program including instructions for causing a first node in a computer system, having a first bus controller, to manage access to a logical I/O device in said computer system by:

receiving on said first controller a request to reserve said logical I/O device; and

communicating in response to receiving said request, a reservation request for said logical I/O device from said first controller to a second controller of a second node for execution by said second controller.

8. The computer-readable medium of claim 7, wherein said computer program further including instructions causing access management by:

reserving said logical I/O device for said first node within said second controller, in response to said reservation request communication.

9. The computer-readable medium of claim 8, wherein said computer program instructions causing said reserving further comprise instructions for:

determining whether said logical I/O device is already reserved within said second controller;

communicating a response, indicating failure to reserve said logical I/O device, to said first node when said logical I/O device is already reserved; and

otherwise, reserving said logical I/O device for said first node within said second controller, and otherwise, reserving said logical I/O device for said first node within said second controller, and communicating to said first node a response indicating success in reserving said logical I/O device.

10. The computer-readable medium of claim 7, wherein after said receiving and before said communicating, said computer program further including instructions for:

determining, in response to said reservation request, whether said logical I/O device is already reserved within said first controller, and aborting said method for managing access when said logical I/O device is already reserved; and

otherwise, reserving said logical I/O device for said first node within said first controller.

11. A computer system comprising:

at least one logical I/O device;

first and second nodes having respective first and second bus controllers, said first controller comprising:

a computer-readable medium storing a computer program for managing access to said logical I/O device by a first node in said computer system, said computer program including instructions for: receiving on said first controller a request to reserve said logical I/O device; and communicating in response to receiving said request, a reservation request for said logical I/O device from said first controller to a second controller of a second node for execution by said second controller;

a CPU, coupled to said computer-readable medium, for executing said computer program stored in said medium; and

a bus communicatively coupling said first and second nodes and said logical I/O device by means of said first and second controllers.

12. A method for managing access to a logical I/O device, said method comprising:
communicatively coupling first and second nodes having respective first and second bus controllers, and said logical I/O device, by means of a bus and said first and second controllers;

receiving, on said first controller, a request to release said logical I/O device; and

communicating a release request for said logical I/O device over said bus from said first controller to said second controller for execution by said second controller, in response to said receipt of said request to release.

13. The method of claim 12, wherein before said step of receiving, the following steps are performed:

receiving on said first controller a request to reserve said logical I/O device; and

communicating by means of said bus from said first to said second controller a reservation request for said logical I/O device for execution by said second controller, in response to said receiving a reservation request.

14. The method of claim 12, further comprising the step of:

releasing said logical I/O device within said second controller, in response to said release request communication.

15. The method of claim 12, wherein said step of communicatively coupling comprises:

communicatively coupling said first and second nodes and a logical device depending from a multi-logical-device, third controller by means of said bus and said first and second controllers.

16. A computer-readable medium for data storage wherein is located a computer program for causing a first node in a computer system, having a first bus controller, to manage access to a logical I/O device in said computer system by:

receiving on said first controller a request to release said logical I/O device; and

communicating by means of a bus from said first controller to a second controller of a second node a release request for said logical I/O device for execution by said second controller, in response to said receiving.

17. The computer-readable medium of claim 16, wherein said computer program further manages access by:

releasing said logical I/O device within said second controller, in response to said release request communication.

18. A computer system comprising:

first and second nodes having respective first and second bus controllers, said first controller comprising

the computer-readable medium of claim 16; and

a CPU, coupled to said medium, for executing said computer program in said medium;

a logical I/O device; and

a bus communicatively coupling said first and second nodes and said logical I/O device by means of said first and second controllers.

19. An apparatus for managing access to a logical I/O device, said apparatus comprising:

means for communicatively coupling first and second nodes, having respective first and second bus controllers, and a logical I/O device;

means for receiving on said first controller a request to reserve said logical I/O device; and

means for communicating from said first to said second controller a reservation request for said logical I/O device for execution by said second controller, in response to said receiving.

20. An apparatus for managing access to a logical I/O device, said apparatus comprising:

means for communicatively coupling first and second nodes, having respective first and second bus controllers, and a logical I/O device;

means for receiving on said first controller a request to release said logical I/O device;
and

means for communicating by means of said bus from said first to said second controller a release request for said logical I/O device for execution by said second controller, in response to said receiving.

21. An apparatus for managing access to a logical input/output device, said apparatus comprising:

a communications link coupling first and second nodes each having respective first and second bus controllers to the logical input/output device;

input logic on said first controller receiving a request to reserve the logical input/output device; and

communications logic communicating from said first controller to said second controller a reservation request for the logical input/output device for execution by said second controller, in response to said receiving.

22. The apparatus in claim 21, wherein the logical input/output device is selected from a plurality of logical input/output devices coupled with a physical input/output device.

23. The apparatus in claim 21, wherein said communications link comprises a bus.

24. The method of claim 1, wherein said communicatively coupling further comprises said logical I/O device is stored on a plurality of physical I/O devices.

25. The method of claim 1, wherein said communicatively coupling further comprises said logical I/O device is selected from a plurality of logical I/O devices, with each logical I/O device defined in part on a common physical I/O device.

26. The system of claim 11, wherein said logical I/O device spans a plurality of physical I/O devices, and said reservation request reserves said logical I/O device without reserving each of said plurality of physical I/O devices.

27. The system of claim 11, wherein said logical I/O device is selected from a plurality of logical I/O devices, each of said plurality of logical I/O devices coupled with at least one common physical I/O device, and said reservation request is executed by said second controller to reserve said logical I/O device without reserving said at least one common physical I/O device.